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(54) MANUFACTURE OF PERMANENT MAGNET POWDER

(57)Abstract:

PURPOSE: To suppress the generation of α -Fe and improve magnetic characteristics by powdering thin stripe extremely quick-cooling alloy into grains which have the average grain diameter in a specific range, nitriding the powder in the N2 and H2 mixed gas and resin-bonding the powder as bond magnet.

CONSTITUTION: Melted Nd, Fe and V alloy is extremely quick-cooled by a Cu rotating roll which is 250mm in diameter and 30mm in width. The alloy thin strip is powdered mechanical powdering and powder with the average grain diameter of 200–300 μ m is provided. Then, nitriding is performed in the N2 and H2 mixed gas composed of H2 by 50% mol ratio and N2 by the rest of the percentage under the reduced pressure of 1atm at the room temperature. The powder is cooled and epoxy resin of 2.0wt.% is mixed. Then, compression molding is performed in the magnetic field of 10kOe with a pressure of 3.0tons/ cm² and resin-curing is performed at 150°C for one hour to manufacture a bonded magnet.

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